UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/772,110	01/26/2001	Carroll Philip Gossett	PGOS-P003	8963

7590 05/08/2003

WAGNER, MURABITO & HAO LLP
Third Floor
Two North Market Street
San Jose, CA 95113

EXAMINER
NGUYEN, HANH N

ART UNIT	PAPER NUMBER
2662	4

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/772,110	Applicant(s) GOSSETT, CARROLL PHILIP	
	Examiner Hanh Nguyen	Art Unit 2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Application filed on 01/26/01* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Objections

Claim 5 is objected to because of the following informalities: According to specification, page 14, lines 15-20; "**for**" on line 3 of claim 5 should be changed to "**from**" to avoid grammatical error. Appropriate correction is required.

Applicant is advised that should claim 10 be found allowable, claim 17 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Applicant is advised that should claim 11 be found allowable, claim 18 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 19, 12, 1, 2, 4, 14, 20, 9, 16 and 24 are rejected under 35 USC 102(e) as being anticipated by **Gilhousen** (US Pat. No. 6,185,246 B1).

In claim 19, **Gilhousen** discloses, in Fig.5, voice channel data (a data signal / a baseband signal) is modulated at an Exclusive OR-Gate 252i (modulator) by PN code (pseudo random code) provided from a PN generator 253i (modulating a data signal with a pseudo random code). See col.15, lines 25-31. The output modulated signal of the exclusive-OR gate 252i (the data signal) is modulated at an Exclusive OR-gate 255i (modulator) by a Walsh sequence signal (an orthogonal code) provided from a Walsh generator 254i (modulating the data signal with an orthogonal code). See col.15, lines 31-40. A direct sequence spread spectrum signals (CDMA) is produced and transmitted through an antenna 180 as described in Fig.4 (transmitting the data signal as baseband direct sequence spread spectrum CDMA). See col.4, lines 1-10, col.14, lines 7-12.

In claim 12, **Gilhousen** discloses that the baseband direct sequence spread spectrum signals (CDMA) in claim 19 is formed in a cell-site transmit modulator 54 (CDMA transmitter) (a baseband direct sequence spread spectrum CDMA transmitter). See col.14, lines 59-65.

In claim 1, **Gilhousen** discloses, in Fig.3, the baseband direct sequence spread spectrum signals (CDMA) in a cell-site transmit modulator 54 receives digital signals from digital data receivers 38, 35, 46 via decoder 50, digital link 52 (receiver) ; and transmits analog signal from antenna 180 (see Fig.4) (Transmitter) (baseband direct sequence spread spectrum transceiver). See col.13, lines 45-54.

In claim 2, **Gilhousen** discloses, in Fig.4, baseband data signals corresponding to channels 1-n are modulated by a set of orthogonal PN sequences provided by orthogonal PN sequences generators 160 (a single modulation stage). See col.13, lines 55-60.

In claim 4, **Gilhousen** discloses, in Figures 4 & 5, a digital to analog D/A converter 280i (see Fig.5) for converting from digital data into analog data (D/A converter converts digital data into analog data); and the analog data (an output of the converter) is directly coupled to RF transmitter 174 (see Fig.4) which is included in an antenna 180 (see Fig.4, output of D/A converter is directly coupled to antenna). See col.16, lines 42-50 & col.14, lines 5-12.

In claim 14, **Gilhousen** discloses, in Figures 4 & 5, a digital to analog D/A converter 280i (see Fig.5) for converting from digital data into analog data (D/A converter converts digital data into analog data); and the analog data (an output of the converter) is directly coupled to RF transmitter 174 (see Fig.4) which is included in an antenna 180 (see Fig.4, output of D/A converter is directly coupled to antenna). See col.16, lines 42-50 & col.14, lines 5-12.

In claim 20, **Gilhousen** discloses, in Figures 4 & 5, a digital to analog D/A converter 280i (see Fig.5) for converting from digital data into analog data (D/A converter converts digital data into analog data); and the analog data (an output of the converter) is directly coupled to RF transmitter 174 (see Fig.4) which is included in an antenna 180 (see Fig.4, output of D/A converter is directly coupled to antenna). See col.16, lines 42-50 & col.14, lines 5-12.

In claim 9, **Gilhousen** discloses, in Figure 1, cellular telephones at mobile units 16 and 18 are communicating via links 20A, 20B, 22A, 22B and cell site 12 (peer to peer cellular communication). See col.4, lines 25-30 & lines 35-40.

In claim 16, **Gilhousen** discloses, in Figure 1, cellular telephones at mobile units 16 and 18 are communicating via links 20A, 20B, 22A, 22B and cell site 12 (peer to peer cellular communication). See col.4, lines 25-30 & lines 35-40.

In claim 24, **Gilhousen** discloses, in Figure 1, cellular telephones at mobile units 16 and 18 are communicating via links 20A, 20B, 22A, 22B and cell site 12 (peer to peer cellular communication). See col.4, lines 25-30 & lines 35-40.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 10 and 17 are rejected under 35 USC 103(a) as being unpatentable over **Gilhousen** (US Pat. No. 6,185,246 B1) in view of **Giallorenzi et al.** (US Pat. No. 6,091,760).

In claim 10, **Gilhousen** does not specifically disclose a baseband direct sequence spread spectrum CDMA comprising a full duplex mode of operation. **Giallorenzi et al.** discloses, in Fig.9, a direct sequence spread spectrum CDMA system 10 (direct sequence spread spectrum CDMA) comprising a radio base unit 12 and a plurality of subscriber units 14. Each subscriber unit 14 performs bidirectional communications (full duplex operation) with base station 12. See col. 13, lines 30-45. Since both **Gilhousen** and **Giallorenzi et al.** refer to direct sequence spread spectrum CDMA, therefore; it would have been obvious to one or ordinary skills in the art to apply the **Gilhousen** such that the full duplex operation is performed by assigning each users signal a different PN code, modulating the users signal with the PN code for transmitting. The motivation is to provide simultaneous conversations between users, reduces interferences, increase signal quality in bad whether.

In claim 17, **Gilhousen** does not specifically disclose a baseband direct sequence spread spectrum CDMA comprising a full duplex mode of operation. **Giallorenzi et al.** discloses, in Fig.9, a direct sequence spread spectrum CDMA system 10 (direct sequence spread spectrum CDMA) comprising a radio base unit 12 and a plurality of subscriber units 14. Each subscriber unit 14 performs bidirectional communications (full duplex operation) with base station 12. See col. 13, lines 30-45. Since both **Gilhousen** and **Giallorenzi et al.** refer to direct sequence spread spectrum CDMA, therefore; it would have been obvious to one or ordinary skills in the art to apply the **Gilhousen** such that the full duplex operation is performed by assigning each users signal a different PN code, modulating the users signal with the PN code for transmitting. The motivation is to provide simultaneous conversations between users, reduces interferences, increase signal quality in bad whether.

Claims 11 and 18 are rejected under 35 USC 103(a) as being unpatentable over **Gilhousen** (US Pat. No. 6,185,246 B1) in view of **Chauncey et al.** (US Pat. No. 6,463,089 B1) .

In claim 11, **Gilhousen** does not disclose the baseband direct sequence spread spectrum CDMA transceiver comprising a half duplex mode of operation. **Chauncey et al.** discloses, in Fig.1, a radio unit 12 comprising a direct sequence spread spectrum modulator 28 which is coupled to a half-duplex operation RF module 30. The RF module 30 as shown in Fig.5 transmits and receives signals in half-duplex operation (half duplex operation). See col.8, lines 10-15 & lines 37-42. Since the radio unit 12 of **Chauncey et al.** operates in a direct sequence spread spectrum operates (CDMA), therefore; it would have been obvious to one of ordinary skills in the art to modify the **Gilhousen** by adapting the RF transmitter 174 (see Fig.4) to operate in half duplex mode. The motivation to operate in half duplex mode is to transmit & receive signals in different frequencies.

In claim 18, **Gilhousen** does not disclose the baseband direct sequence spread spectrum CDMA transceiver comprising a half duplex mode of operation. **Chauncey et al.** discloses, in Fig.1, a radio unit 12 comprising a direct sequence spread spectrum modulator 28 which is coupled to a half-duplex operation RF module 30. The RF module 30 as shown in Fig.5 transmits and receives signals in half-duplex operation (half duplex operation). See col.8, lines 10-15 & lines 37-42. Since the radio unit 12 of **Chauncey et al.** operates in a direct sequence spread spectrum operates (CDMA), therefore; it would have been obvious to one of ordinary skills in the art to modify the **Gilhousen** by adapting the RF transmitter 174 (see Fig.4) to

operate in half duplex mode. The motivation to operate in half duplex mode is to transmit & receive signals in different frequencies.

Claim 8 is rejected under 35 USC 103(a) as being unpatentable over **Gilhousen** (US Pat. No. 6,185,246 B1) in view of **Chadwick et al.** (US Pat. No. 6,005,891).

In claim 8, **Gilhousen** does not disclose the antenna is driven mismatched. **Chadwick et al.** discloses a spread spectrum receiver that determine an impedance mismatched of an antenna (antenna is mismatched). See col.1, lines 35-55. Since Chadwick et al. refers to a spread spectrum receiver using PN code generator 30 (see Fig.1), therefore; it would have been obvious to one of ordinary skills in the art to apply the **Chadwick et al.** into the **Gilhousen** so that the antenna is mistmatched. The motivation is to boot the weak baseband signal by using amplifier.

Claim 23 is rejected under 35 USC 103(a) as being unpatentable over **Gilhousen** (US Pat. No. 6,185,246 B1).

In claim 23, **Gilhousen** disclose, in Fig.1, cellular telephone at mobile unit 16 communicates baseband signals via links 20A, 20B to cell site 12(full duplex baseband direct sequence spread spectrum). See col.4, lines 24-30 & 35-40. **Gilhousen** does not disclose a same antenna to transmit and receive baseband signals in a full duplex mode. Since the cellular telephone at mobile unit 16 communicate with the cell site 12 in duplex mode, it is inherent in the art that the cellular telephone 16 has an antenna that transmits and receives baseband signal at the same time. Therefore, it would have been obvious to one of ordinary skills in the art to assume that the mobile unit 16 having an antenna that simultaneously transmit and receive

baseband signal with other mobile unit 18 via cell sites 12. the motivation is to perform bi-direc tional conversation, reduce interferences.

Claims 5, 21, 27 are rejected under 35 USC 103(a) as being unpatentable over **Gilhousen** (US Pat. No. 6,185,246 B1) in view of **Ushirokawa et al.** (US Pat. No. 5,646,964).

In claim 5, **Gilhousen** does not disclose an active servo system for canceling transmit signals from receive signals. **Ushirokawa et al.** discloses, in Fig.1, a direct sequence CDMA receiver (direct sequence spread spectrum CDMA transceiver) which includes an interference canceller 4 (an active servo system) for canceling signals from undesired sources (canceling transmit signals) introduced to a signal received (from receive signals) from a desired source. See Abstract & col.8, lines 40-45. Since the DS/CDMA receiver of **Ushirokawa et al.** retrieves baseband signals (see col.4, lines 40-45), therefore; it would have been obvious to one of ordinary skills in the art to have the interference canceller in **Gilhousen** to filter undesired signals caused by interferences by subtracting the signals from undesired sources introduced into a signal received from a desired source. The motivation is to reduce interferences which caused by bad whether, and improve signal quality as the mobile user is moving.

In claim 21, **Gilhousen** does not disclose an active servo system for canceling transmit signals from receive signals. **Ushirokawa et al.** discloses, in Fig.1, a direct sequence CDMA receiver (direct sequence spread spectrum CDMA transceiver) which includes an interference canceller 4 (an active servo system) for canceling signals from undesired sources (canceling transmit signals) introduced to a signal received (from receive signals) from a desired source. See Abstract & col.8, lines 40-45. Since the DS/CDMA receiver of **Ushirokawa et al.** retrieves

baseband signals (see col.4, lines 40-45), therefore; it would have been obvious to one of ordinary skills in the art to have the interference canceller in **Gilhousen** to filter undesired signals caused by interferences by subtracting the signals from undesired sources introduced into a signal received from a desired source. The motivation is to reduce interferences which caused by bad whether, and improve signal quality as the mobile user is moving.

Claims 3, 6, 13, 15, 22 are rejected under 35 USC 103(a) as being unpatentable over **Gilhousen** (US Pat. No. 6,185,246 B1) in view of **Bi** (US Pat. No. 5,623,485).

In claim 3, **Gilhousen** does not disclose a Hadamard function having pseudorandomly shuffled rows. **Bi** discloses a Hadamard matrix having rows corresponding to sequences to modulate a scrambled signal r (pseudorandomly shuffled row) after this signal r has been modulated by a PN code provided from a PN generator 125 (a Hadamard function having pseudorandomly shuffled rows). See col.6, lines 48-65. Since the PN scrambled row is the same as the PN shuffled row and **Gilhousen** discloses a table of orthogonal Walsh code sequences stored in the control processor 48 (see col.13, lines 28-33), therefore; it would have been obvious to one of ordinary skills in the art to use the PN scrambled row/code in Hadamard matrix as a PN shuffled row in **Gilhousen** to modulate the data signal by multiplying user data with a corresponding code / row contained in the lookup table (modulate data signal). The motivation is to enable multiple mobile users within a cell to communicate under control by a base station.

In claim 13, **Gilhousen** does not disclose a Hadamard function having pseudorandomly shuffled rows. **Bi** discloses a Hadamard matrix having rows corresponding to sequences to modulate a scrambled signal r (pseudorandomly shuffled row) after this signal r has

been modulated by a PN code provided from a PN generator 125 (a Hadamard function having pseudorandomly shuffled rows). See col.6, lines 48-65. Since the PN scrambled row is the same as the PN shuffled row and **Gilhousen** discloses a table of orthogonal Walsh code sequences stored in the control processor 48 (see col.13, lines 28-33), therefore; it would have been obvious to one of ordinary skills in the art to use the PN scrambled row/code in Hadamard matrix as a PN shuffled row in **Gilhousen** to modulate the data signal by multiplying user data with a corresponding code / row contained in the lookup table (modulate data signal). The motivation is to enable multiple mobile users within a cell to communicate under control by a base station.

In claim 6, **Gilhousen** does not disclose that RF signals are spread across DC to 30 MHz. **Bi** discloses the modulated signals (RF signals) is spreaded over a spectrum of the bandwidth of the particular link (spreading RF signal over a bandwidth). See col.6, lines 57-60. Since **Gilhousen** refers to a CDMA system transmitting RF direct sequence spread spectrum signals from baseband signals, therefore; it would have been obvious to one of ordinary skills in the art to spread spectrum of RF signals in **Gilhousen** over any bandwidth including 30MHz range as required by the system. The motivation is to provide CDMA transceiver capability to broadcast stronger signals with higher output power, improve signal-to-noise ratio, better signal quality.

In claim 15, **Gilhousen** does not disclose that RF signals are spread across DC to 30 MHz. **Bi** discloses the modulated signals (RF signals) is spreaded over a spectrum of the bandwidth of the particular link (spreading RF signal over a bandwidth). See col.6, lines 57-60. Since **Gilhousen** refers to a CDMA system transmitting RF direct sequence spread spectrum signals from baseband signals, therefore; it would have been obvious to one of ordinary skills in

the art to spread spectrum of RF signals in **Gilhousen** over any bandwidth including 30MHz range as required by the system. The motivation is to provide CDMA transceiver capability to broadcast stronger signals with higher output power, improve signal-to-noise ratio, better signal quality.

In claim 22, **Gilhousen** does not disclose that RF signals are spread across DC to 30 MHz. **Bi** discloses the modulated signals (RF signals) is spreaded over a spectrum of the bandwidth of the particular link (spreading RF signal over a bandwidth). See col.6, lines 57-60. Since **Gilhousen** refers to a CDMA system transmitting RF direct sequence spread spectrum signals from baseband signals, therefore; it would have been obvious to one of ordinary skills in the art to spread spectrum of RF signals in **Gilhousen** over any bandwidth including 30MHz range as required by the system. The motivation is to provide CDMA transceiver capability to broadcast stronger signals with higher output power, improve signal-to-noise ratio, better signal quality.

Claims 25, 26, 28 and 30 are rejected under 35 USC 103(a) as being unpatentable over **Gilhousen** (US Pat. No. 6,185,246 B1) in view of **Bi** (US Pat. No. 5,623,485).

In claim 25, **Gilhousen** discloses, in Fig.4 a direct sequence spread spectrum signals (CDMA) is produced and transmitted through an antenna 180 (transmitting the data signal as baseband direct sequence spread spectrum CDMA). See col.14, lines 7-12. **Gilhousen** does not disclose modulating a data signal with a Hadamard function having pseudorandomly scrambled rows. **Bi** discloses a row of Hadamard matrix having corresponding sequence to modulate a scrambled signal r (a data signal) after this signal r has been modulated by a PN code provided from a PN generator 125 (modulating a data signal with a Hadamard function having

pseudorandomly scrambled rows). See col.6, lines 48-65. Since **Gilhousen** discloses a table of orthogonal Walsh code sequences stored in the control processor 48 (see col.13, lines 28-33), therefore; it would have been obvious to one of ordinary skills in the art to use the row in Hadamard matrix as a code sequence in the Walsh generator 254i of **Gilhousen** to modulate the data signal by multiplying user data with a corresponding code / row contained in the lookup table (modulate data signal). The motivation is to enable multiple mobile users within a cell to communicate under control by a base station.

In claim 26, **Gilhousen** discloses, in Figures 4 & 5, a digital to analog D/A converter 280i (see Fig.5) for converting from digital data into analog data (D/A converter converts digital data into analog data); and the analog data (an output of the converter) is directly coupled to RF transmitter 174 (see Fig.4) which is included in an antenna 180 (see Fig.4, output of D/A converter is directly coupled to antenna). See col.16, lines 42-50 & col.14, lines 5-12.

In claim 30, **Gilhousen** discloses, in Figure 1, cellular telephones at mobile units 16 and 18 are communicating via links 20A, 20B, 22A, 22B and cell site 12 (peer to peer cellular communication). See col.4, lines 25-30 & lines 35-40.

In claim 28, **Gilhousen** does not disclose that RF signals are spread across DC to 30 MHz. **Bi** discloses the modulated signals (RF signals) is spreaded over a spectrum of the bandwidth of the particular link (spreading RF signal over a bandwidth). See col.6, lines 57-60. Since **Gilhousen** refers to a CDMA system transmitting RF direct sequence spread spectrum signals from baseband signals, therefore; it would have been obvious to one of ordinary skills in the art to spread spectrum of RF signals in **Gilhousen** over any bandwidth including 30MHz range as required by the system. The motivation is to provide CDMA transceiver capability to

broadcast stronger signals with higher output power, improve signal-to-noise ratio, better signal quality.

Claim 29 is rejected under 35 USC 103(a) as being unpatentable over **Gilhousen** (US Pat. No. 6,185,246 B1).

In claim 29, **Gilhousen** disclose, in Fig.1, cellular telephone at mobile unit 16 communicates baseband signals via links 20A, 20B to cell site 12(full duplex baseband direct sequence spread spectrum). See col.4, lines 24-30 & 35-40. **Gilhousen** does not disclose a same antenna to transmit and receive baseband signals in a full duplex mode. Since the cellular telephone at mobile unit 16 communicate with the cell site 12 in duplex mode, it is inherent in the art that the cellular telephone 16 has an antenna that transmits and receives baseband signal at the same time. Therefore, it would have been obvious to one of ordinary skills in the art to assume that the mobile unit 16 having an antenna that simultaneously transmit and receive baseband signal with other mobile unit 18 via cell sites 12. the motivation is to perform bidirec tional conversation, reduce interferences.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kumar (US Pat. No. 5,825,807) discloses System and Method for Multiplexing a Spread Spectrum Communication System.

Shea et al. (US Pat. No. 5,809,061) discloses CDMA Communication System With Pilot Tone Control.

Gilhousen et al. (US Pat. No. 5,715,236) discloses System and Method for Generating Signal waveforms in a CDMA cellular telephone System.

Fukawa et al. (US Pat. No. 6,128,332) discloses Spread Spectrum Transmitter and Receiver Employing Composite Spreading Codes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 703 306-5445. The examiner can normally be reached on Monday-Friday 8:00 AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703 306-4744. The fax phone numbers for the organization where this application or proceeding is assigned are 703 305-3988 for regular communications and 703 308-9051 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Fax number : 703 872-9314

Hanh Nguyen

April 19, 2003